Considerations for Integrating Health Campaigns: A Synthesis of Findings from Implementation Research Studies in Immunization, Neglected Tropical Diseases, Malaria, and Vitamin A Supplementation

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Executive Summary

Background: Ministries of health, donors, and global health organizations are exploring opportunities to integrate health campaigns to maximize existing resources and better meet the health care needs of populations through prevention, control, and elimination of disease. Integrating health campaigns can involve full integration (co-delivery) of two or more health interventions or partial integration of campaign functions. The Health Campaign Effectiveness (HCE) Coalition issued a request for proposals in 2021 to support research partners in low- and middle-income countries to conduct implementation research (IR) to explore or evaluate integrated health campaigns related to immunization, neglected tropical diseases, malaria, and vitamin A supplementation. HCE conducted a synthesis, which summarized the outcomes of the integrated campaigns in these projects, identified the enabling factors and challenges encountered, highlighted the promising practices that campaign managers should consider, and specified the knowledge gaps to fill.

Methods: Eight IR studies were selected based on an expert review process. They were implemented between March 2021 and August 2022 by research partners collaborating with governments in Bangladesh, Colombia, Ethiopia, Guinea, Nigeria, and Rwanda. Of the eight projects, two focused on the planning and preparation of integrated campaigns, three focused on evaluating the process and outcomes of a co-delivered campaign, and three examined information on past integrated campaigns in multiple countries from campaign managers or from literature reviews. Staff at the HCE Coalition’s program office, in collaboration with the HCE Campaign Integration Workgroup, conducted a descriptive analysis of outcomes and a qualitative evidence synthesis of the reports of the mixed-methods (quantitative and qualitative) IR projects.

Results: The three IR projects on co-delivery, which assessed coverage levels of the integrated interventions, found that coverage remained high at approximately 83% to 89% in districts in Nigeria, Ethiopia, and Guinea. Individual projects assessed additional outcomes, including beneficiary safety, community acceptability, opportunity to reach zero-dose individuals, cost-effectiveness, and changes in knowledge, attitudes, and behavior related to the uptake of the integrated interventions. The promising practices that emerged from the qualitative evidence synthesis were grouped into four overarching themes, as follows:

Theme 1: Collaborative Planning

1. Employ a co-design approach to allow campaign teams to apply adaptive management to pinpoint and address potential bottlenecks for integrated campaigns.
2. Align components of integrated campaigns with established components in the health system.
3. Leverage the resources and experience of a well-known national health program to allow for greater acceptability of the intervention being integrated.

Theme 2: Community and Stakeholder Engagement during All Phases of the Campaign

4. Ensure the experiences and priorities of a wide range of stakeholders are incorporated in the planning and implementation.
5. Leverage existing coordination mechanisms and systems when planning and implementing integrated campaigns.
6. Select the appropriate health worker and community health worker cadres within the health system to ensure delivery of more complex integrated interventions.
7. Ensure planning and remuneration addresses the workload of health workers and community health workers.
8. Develop and deliver tailored social and behavioral change communication.

Theme 3: Government Leadership and Coordination During All Phases
9. Work through a coordinating body that ensures transparency about the activity and facilitates advocacy and support for the integrated campaign.
10. Convene all stakeholders after the integrated campaign to review performance and reflect on challenges and solutions for future campaigns.

Theme 4: Digital Tool Use
11. Identify opportunities in which digital tools may be used during all phases of the campaign and plan for their use.
12. Strengthen the capacity of staff to use and manage digital tools to close capacity gaps among governments and implementers conducting integrated health campaigns.
13. Document challenges in the management and use of digital tools and dashboards to understand how tools and processes can be improved for future integrated health campaigns.

Conclusions: The outcomes of the studies shed light on whether integrated campaigns work. The themes and promising practices illuminate how they worked and provide a basis for campaign managers’ action. Knowledge gaps that need further attention center on community health worker incentives during integrated campaigns; cost-effectiveness of integrated campaigns; evaluations of scaled-up integrated health campaigns; how to achieve continuous input from the community; and the ways that digitization may improve integrated campaign operations and outcomes. The IR studies covered a breadth of study designs, health programs, and campaign integration methods. A set of 13 promising practices were distilled from the synthesis. Campaign managers, funders, and partners may apply and tailor these promising practices to their local context in the pursuit of achieving public health goals through integrated campaigns.
Background

Achieving the United Nations Sustainable Development Goal 3 of “ensuring healthy lives and promoting well-being for all at all ages” requires great effort and ingenuity and a variety of strategies [1]. Health campaigns are time-bound, intermittent activities that address specific epidemiological challenges, expediently fill delivery gaps, or provide surge coverage for health interventions. The use of targeted, vertical health campaigns marshals resources and expertise to make rapid, focused progress on a health goal in a limited time frame [2]. However, populations may have multiple health care needs and overlapping risks related to vaccine-preventable diseases, malaria, neglected tropical diseases (NTDs), nutritional deficiencies, and more. Communities may be strained from receiving one health campaign after another [3]. To better utilize existing resources and accomplish disease-elimination goals, ministries of health are exploring and sometimes embracing campaign integration—that is, the co-delivery of more than one health intervention or the integration of campaign interventions with services in the primary health care system [4].

Campaign integration can be seen as a continuum, with varying degrees of resources, responsibilities, and activities shared between the integrated programs, according to the World Health Organization (WHO) [5]. Campaigns can be partially (functional) or fully integrated (co-delivery). Campaigns may be considered partially integrated if they share one or few components, without co-delivery of the interventions at the point of service. Fully integrated campaigns co-deliver the interventions and may share components, such as planning, microplanning, social mobilization, set-up/preparations, management, implementation, post-campaign activities, and surveillance, monitoring, and evaluation [3].

Global health programs have strategic frameworks and recommendations to guide countries through the process of campaign delivery and integration. In particular, the Immunization Agenda 2030 provides a comprehensive framework for vaccination campaigns, highlighting key areas of focus to facilitate the achievement of Sustainable Development Goal 3 to ensure healthy lives and promote well-being for all at all ages [6]. WHO’s Ending the Neglect to Attain the Sustainable Development Goals: Road Map for Neglected Tropical Diseases 2021–2030 defines pillars and cross-cutting targets to combat NTDs, including the integration of NTD interventions with the treatment and monitoring of other diseases or multi-sectoral collaboration with the health care system [7]. WHO and United Nations Children’s Fund (UNICEF) guidelines describe campaigns targeting nutritional deficiencies, either by integrating with primary health care systems or by pairing service delivery with other campaigns, such as polio vaccination [8–10].

Anticipated benefits of integrated campaigns include increased coverage and acceptability of the interventions, cost savings for the individual campaigns, and improved program efficiencies as compared with campaigns operating separately [3]. Barriers include the complexity in merging different programs and conflicting policy priorities. For instance, combining campaigns from different health domains may dilute high-level political commitment. Integrating the implementation of different interventions would add complexity to planning and delivery, potentially leading to delays in the delivery of the interventions [3]. Further barriers include financial challenges, such as donor prioritization, varying funding cycles, and
increased costs; difficulty in managing and training a workforce and their expanded responsibilities; disruptions to existing routine services; and challenges with recording, reporting, monitoring, and evaluation of all interventions [3].

In 2020, the Health Campaign Effectiveness (HCE) Coalition, a program of The Task Force for Global Health, found through a rapid literature review and a stakeholder consultation that there was little recent information on approaches for planning and conducting integrated health campaigns in NTDs, malaria, vitamin A supplementation (VAS), and immunizations. HCE’s Scientific and Technical Advisory Committee developed a Research and Learning Agenda [11], which included research questions on the effects of integrated campaigns; enabling and hindering factors that affect whether integrated campaigns are considered, planned, and initiated; collaborative planning approaches and models; approaches to engage communities during all phases of campaign planning, implementation, and evaluation; and use of digital tools. Through a request for proposals, the HCE Coalition funded organizations in low- and middle-income countries collaborating with government partners to conduct implementation research (IR) projects, each with a budget ceiling of US$150,000. Six projects meeting these characteristics, as well as two supplementary multi-country studies, were selected after a multi-step expert review process. These IR projects were started while the HCE Coalition was funding a set of case study projects on the planning and preparation of integrated health campaigns in six countries [12]. Beyond planning and preparation of integrated campaigns, there was little evidence on the process and outcomes related to the implementation of integrated campaigns. More evidence was needed on the implementation and effects of integrated campaigns. A synthesis of findings across implementation research studies was undertaken and the results of that synthesis are reported here.

Objectives

The objectives of the synthesis were to summarize the outcomes of integrated health campaigns and identify the challenges encountered, enabling factors, promising practices, and knowledge gaps in the IR projects supported by HCE. The goal was to inform campaign planners and decision makers who are considering campaign integration and to contribute to answering the HCE Research and Learning Agenda questions.

Methods

Characteristics of implementation research projects. The projects were conducted between March 2021 and August 2022 and were led by non-governmental organizations or universities partnering with national and subnational government agencies. Two projects focused on the planning and preparation of integrated campaigns, three evaluated the process and outcomes of co-delivered campaigns, and three examined information on past integrated campaigns in multiple countries from campaign managers or from literature reviews (Box 1 and Annex).
Box 1. HCE-Supported Implementation Research Projects on Health Campaign Integration, 2021–2022

Planning and Preparation for Integrated Campaigns

- Researchers at the Universidad de los Andes in Colombia and government partners in the Vaupés department (region) focused on capacity building and data management for the delivery of integrated neglected tropical disease (NTD) campaigns to remote indigenous populations. The project started with a scoping literature review and focus group discussions with key stakeholders, followed by implementation of an in-person and electronic training module for health care providers, which was assessed with pre- and post-questionnaires, and an electronic data collection tool on NTDs for the health information system [13].

- Connecti3, University of Rwanda, and Orbital Media developed and implemented a predictive analytics tool for the microplanning of integrated health campaigns for maternal and child health and NTDs. They evaluated its use, in collaboration with the Ministry of Health of Rwanda. The use of the predictive tool was assessed via surveys, workshop observations, key informant interviews with campaign managers, and a review of data from past campaigns [14].

Process and Outcomes of Co-Delivered Campaigns

- Researchers at Jimma University in Jimma Zone, Oromia, Ethiopia, collaborated with the Ethiopian Ministry of Health to develop, implement, and evaluate the outcomes of an integrated NTD (onchocerciasis and soil-transmitted helminthiasis) campaign, which included identification of unvaccinated and partially vaccinated children and education outreach on water, sanitation, hygiene and COVID-19 as complementary health interventions [15]. The team used mixed-methods implementation research to interview key stakeholders and survey 732 households.

- In Guinea, Fondation Santé et Développement Durable and Centre d’Excellence de Formation et Recherche sur les Maladies Prioritaires en Guinée and government partners evaluated the planning and implementation of an integrated measles and meningitis A vaccination campaign in two districts. The team administered a post-campaign survey and interviewed program planning officials and key health staff [16].

- The Malaria Consortium and government partners in Nigeria developed, implemented, and evaluated the outcomes and cost-effectiveness of integrating seasonal malaria chemoprevention with vitamin A supplementation in Bauchi State. The team administered baseline and endline surveys of children, interviewed government and community actors, and collected costing data [17].

Information on Completed Integrated Campaigns in Multiple Countries from Campaign Managers or from Literature Reviews

- In Bangladesh, a BRAC University team and government partners identified enablers and barriers to integrated campaigns in immunization and NTDs through a scoping literature
Researchers at Emory University conducted a scoping literature review on the total value of integrated health campaigns, with a subsequent focus on NTDs, to determine the outcomes, risks, and benefits to programs and communities [19].

Linksbridge SPC conducted a multi-country survey of campaign managers to identify reported integrated components, the use of digitization, and factors that influence integrated campaigns across multiple health domains. This was followed by key informant interviews with campaign managers in five countries and a global-level partner [20].

Methods used by implementation research projects. The methods varied according to the specific project objectives and designs. The projects collected qualitative and quantitative data and analyzed primary and secondary data (see Annex for details). Prior to starting data collection, institutional and ethical approval was received for each project in the country of the research [13–20]. Between August and December 2022, project research reports/briefs, which described promising practices and lessons learned, were developed. A promising practice was defined as an action that emerged from the IR experiences, which campaign planners and implementers should consider doing and building into plans. This definition was based on literature on evidence-based, best, or promising practices [21–23].

Synthesis of implementation research briefs. Using a qualitative synthesis approach [24], the HCE program office synthesis team identified the outcomes and themes across the IR projects. This information was organized under enabling factors, challenges, and promising practices. The synthesis team analyzed findings from projects in a spreadsheet and used the online whiteboard tool Miro to organize information in descriptive categories prior to writing a narrative on the findings. Below, the findings are illustrated with examples and quotes from the projects.
Results

Outcomes of Integrated Campaigns

The outcomes of integrated campaigns from the IR studies are presented in Table 1, followed by the themes that emerged, including enablers, challenges, and promising practices.

Table 1. Outcomes of Integrated Campaigns Assessed in the Implementation Research Projects

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Select Findings</th>
<th>Projects</th>
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| Treatment coverage of co-delivered interventions | • Co-delivery of two health interventions did not have a negative impact on coverage; coverage remained high at approximately 83% to 89% for integrated campaigns in Nigeria, Ethiopia, and Guinea  
• Directly observed therapy was used for quality assurance in Ethiopia and Nigeria  
• Coverage in Nigeria was equitable when analyzed based on beneficiary characteristics, except for rural versus urban areas (equity) | Bangladesh, Ethiopia, Guinea, Nigeria, Emory University scoping literature review, and Linksbridge multi-country survey |
| Beneficiary safety                | • Beneficiary safety was not compromised.  
• Adverse events did not increase | Ethiopia, Guinea, Nigeria, and Emory University scoping literature review |
| Community acceptability of integrated health campaigns | • Community members expressed acceptance of or support for the integrated health campaign  
• Some community members had concerns about safety, which stakeholders articulated could be allayed by health education | Bangladesh, Ethiopia, Guinea, Nigeria, and Emory University scoping literature review |
| Opportunity to identify and refer zero-dose\(^1\) individuals | • An integrated campaign created an opportunity to identify and refer unvaccinated or undervaccinated children to health facilities for immunization services | Bangladesh, Ethiopia, Guinea, and Linksbridge multi-country survey |
| Cost-effectiveness                | • Offering an intervention in an integrated campaign resulted in an additional cost per beneficiary, which was seen as cost-effective and needed to be budgeted for | Bangladesh, Nigeria, Emory University scoping literature review, and Linksbridge multi-country survey |
| Improvements in knowledge, attitudes, and practices | • Knowledge, attitudes, and practices improved among the populations who received tailored social and behavioral change communication during an integrated campaign | Ethiopia |

Coverage Remained High in a Scenario of Co-Delivery

\(^1\) The term “zero dose” is used in immunization and can have varying definitions. In this synthesis report, zero dose refers to communities that have not been covered by a targeted campaign intervention.
Integrated campaign coverage was measured by projects in Nigeria, Ethiopia, and Guinea. In Bauchi State, Nigeria, integrating VAS with seasonal malaria chemoprevention (SMC) did not adversely affect the coverage of the SMC campaign; SMC coverage was 91.9% when delivered without VAS in the third SMC round and 89.4% when it was delivered with VAS in the fourth SMC round, a non-significant difference [17]. The proportion of children who received the first dose of SMC as directly observed treatment increased from 77.1% at baseline to 85.9% at endline. In Jimma Zone of Ethiopia’s Oromia State, the post-campaign survey findings on the co-delivery of two mass drug administration (MDA) campaigns revealed an overall treatment coverage of 83.2% (n = 2,610 eligible individuals) for a combination therapy of ivermectin for onchocerciasis treatment and mebendazole or albendazole for soil-transmitted helminthiasis (STH) treatment [15]. In the project in Guinea, a measles and meningitis A immunization campaign was evaluated in two districts. Vaccination coverage was 82.4% (95% CI, 79.8–84.8) in Kankan district and 54.9% (95% CI, 44.6–64.7) in Siguiri district [16]. Siguiri’s lower vaccine coverage was attributed to the unavailability of family members during the campaign’s visits to households. A vaccinator explained in an interview:

“In Siguiri, people are often in search of gold; so when you go to the households, it is not easy to find the children because they are often with their parents in the mining sites...”

Some integrated NTD campaigns went beyond measuring coverage. In the Emory University scoping literature review, 14 studies of integrated campaigns showed decreased prevalence or intensity of the NTD infection, which was considered strong evidence [19].

In addition, equitable coverage was assessed in Nigeria. No significant difference was found at endline between surveyed children who received SMC and VAS and children who did not, when analyzed based on demographic characteristics (such as child’s age, sex, religion, and their caregivers’ educational level, occupation, and wealth quintile). One exception was that children living in urban areas were less likely to be reached with either SMC or VAS than those in rural areas (a significant difference). Similarly, stakeholders in the IR study in Bangladesh reported that residents of urban informal settlements had lower participation in past integrated immunization campaigns than those in rural areas.

**Beneficiary Safety Was Not Compromised During Co-Delivery**

In the study in Nigeria, adverse drug events were reported in 1.6% of children who received VAS and SMC, compared with 4.1% among children who received only SMC in the earlier round. In Ethiopia, the post-campaign survey found only three reported cases of mild adverse drug events during the integrated campaign for STH and onchocerciasis. Beneficiaries and health workers reported that the co-administration was safe. Similarly, in the Emory University scoping literature review, six integrated NTD studies reported that adverse events were mild or transient.

**Community Acceptability of Integrated Health Campaigns Was Evident**

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2 Among the 14 studies, some reported on multiple outcomes; Seven studies reported on schistosomiasis; ten studies reported on soil-transmitted helminthiasis including roundworm (Ascaris lumbricoides), whipworm (Trichuris trichiura), and hookworm (Necator americanus and Ancylostoma duodenale); and one study reported on onchocerciasis and lymphatic filariasis [43].

3 The multi-antigen study in Guinea did not report on adverse events, and this was seen as a need.
In Nigeria, caregivers reported being happy with the combined offer of VAS and SMC due to the health benefits to their children. Community SMC distributors, caregivers, and some stakeholders believed the integration of VAS was feasible and likely to continue. In Ethiopia, over 80% of the household survey respondents indicated a positive experience and satisfaction with co-delivery of onchocerciasis and STH MDA campaigns. In Guinea, stakeholders were satisfied with the multi-antigen (measles and meningitis A) campaign and believed that the vaccines would provide children with protection. However, some parents and caregivers of children were concerned that their children “would not be able to handle a double vaccination” and needed to be “convinced and reassured about the [safety of] two simultaneous injections.”

**Integrated Campaigns Identified Zero-Dose Individuals**

In the Linksbridge multi-country study, campaign managers indicated in key informant interviews that integrated campaigns were important for reaching hard-to-reach and zero-dose communities. The campaign managers noted that time and resources should be optimized to meet the many needs of remote populations and that campaigns should be tailored to the local context. In Guinea, in the coverage survey following the measles and meningitis A campaign, 8.1% (138 out of 1,700) of eligible children aged 6 to 84 months were identified as zero dose (defined as not having received any vaccine). Of these, 60.9% (84 out of 138) were referred to a health center and received vaccination [16].

In Ethiopia, during microplanning/household registration before the NTD co-delivery campaign, trained community volunteers also examined the vaccination status of infants (younger than 1 year old). Among registered infants, 12.7% (332 out of 2,617) were found to be unvaccinated (zero dose in this study) or partially vaccinated. In the post-campaign survey, 5.2% (40 out of 776) of households that had an unvaccinated or partially vaccinated child prior to the campaign reported that the child had been referred to a health extension worker (HEW; i.e., a salaried worker in the community) and taken to the health facility for vaccination. Of these 40 children, 77.5% (31 out of 40) had the vaccination confirmed on the project vaccination card.

In Bangladesh, stakeholder interviews shed light on how missed children had been identified following initial rounds of National Immunization Day campaigns in the past. Borrowing the “child-to-child” search strategy of the oral polio vaccine campaign, households were visited over a four-day post-campaign period to identify children who had been unreached. During the visits, children who had not been reached were identified and received an integrated package of services: oral polio vaccine, VAS, and deworming tablets.

**Cost-Effectiveness and Efficiency Were Also Assessed in a Few Studies**

Integrated campaigns are expected to share human resources, transportation, supplies, and other costs and achieve efficiencies [25]. In Nigeria, the project team measured the economic and financial program costs of adding VAS to the SMC campaign. The additional cost was measured as $0.24 per child (from a
cost of $0.94 for SMC to $1.18 for SMC plus VAS). This increase was considered to be cost-effective [15,26].

The scoping literature review conducted by researchers at Emory University found evidence from 16 studies that integrated NTD campaigns were more cost-effective than single-intervention campaigns. This was measured in a variety of ways, including programmatic costs, cost per individual reached, cost per disability-adjusted life year, and cost savings. In the study in Bangladesh, survey respondents noted that integrating interventions for vaccine-preventable diseases in campaigns “reduced operating costs...and provided multiple services concurrently.”

In three projects, survey and interview respondents indicated that an integrated campaign may save the time of the health workers or beneficiaries, which suggests efficiency. Survey respondents in Bangladesh believed integrated campaigns provided a one-stop service of multiple interventions and saved the time of the health care providers and beneficiaries. In Ethiopia, the integrated NTD campaign frontline workers stated in interviews that the advantages to integrated campaigns included higher efficiency due to reduced wastage and misuse of drugs. In Guinea, according to the project team:

“The vaccination campaign integration allows for efficiency by managing the campaign economically and rationally with regards to the budget. From a temporal point of view, integration makes it possible to ‘speed up the work.’”

Benefits to parents were also suggested by the Guinea project team:

“By combining the two (campaigns)…parents spend less and less time on their children’s health problems related to measles and meningitis.”

**Improvements in Knowledge, Attitudes, and Practices Were Observed**

In Ethiopia, the post-campaign coverage survey captured knowledge, attitudes, and practices among the community that received the two interventions. The study applied the RE-AIM (Reach, Effectiveness, Adoption, Implementation, and Maintenance) framework to the IR. Most survey respondents (88.5%, n = 4,343) received social and behavioral change communication (SBCC) information during the co-delivery campaign, including information on the benefits of ivermectin (67.4%) and co-administration (44.6%). HEWs were the main source of SBCC information, followed by youth volunteers (reported by 66.7% and 64.7% of respondents, respectively). Knowledge increased on the bite of black fly as the cause of transmission of onchocerciasis (16.1% to 52% from baseline to endline) and on the nature of onchocerciasis treatment (41% to 78%). Knowledge about the perceived risk factors for STH also

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4 Both the $0.24 and $0.94 estimated costs per child were calculated from distribution, medicine, and training costs, which were considered to be the main cost drivers of campaigns. Start-up and design costs were not included.
increased (12-point increase on several risk factors), as did reported hand washing (also a 12-point increase on several washing behaviors).

**Themes and Related Enablers and Challenges**

Four themes emerged from the synthesis, presented below in Table 2, followed by a brief discussion of related literature and strategy documents and a list of enabling factors and challenges. The promising practices are described in Table 3 following this section.

**Table 2. Themes, Enablers, and Challenges from Synthesis of Implementation Research on Campaign Integration**

<table>
<thead>
<tr>
<th>Theme 1: Using a collaborative approach to planning contributes to the successful integration of health campaigns.</th>
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<tr>
<td><strong>Enablers</strong></td>
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<td><strong>Challenges</strong></td>
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<th>Theme 2: Engaging communities and stakeholders during all phases of the integrated campaign contributes to the acceptance of and support for the campaign.</th>
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<tbody>
<tr>
<td><strong>Enablers</strong></td>
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<td><strong>Challenges</strong></td>
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<th>Theme 3: Government leadership and coordination during all phases of integration ensure a well-planned, coordinated, and executed integrated health campaign.</th>
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<td><strong>Enablers</strong></td>
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<th>Theme 4: Use of digital tools or applications may facilitate campaign integration and create efficiencies in different phases of the campaign.</th>
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<tr>
<td><strong>Enablers</strong></td>
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<td><strong>Challenges</strong></td>
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Note: No challenges were noted by the implementation research project reports under theme 3.
Theme 1: Using a Collaborative Approach to Campaign Planning Contributes to the Successful Integration of Health Campaigns

Government collaboration with nongovernmental organization actors and donors at national, subnational, and community levels during the planning phase allowed the campaign organizers to jointly identify and set priorities while ensuring the activity addressed community needs. The importance of open and frequent collaboration between stakeholders is supported by recent research, according to a 2021 literature review of NTD health campaign integration [27]. It is also recognized as an important consideration in WHO frameworks and guidelines spanning multiple health domains, including malaria, NTDs, and polio [7,28,29].

- **Enabler:** Involving key stakeholders (implementers, donors, national and subnational government teams) from the earliest stages of planning an integrated campaign fosters collaborative planning.

In Nigeria, researchers found that early, collaborative microplanning and targeted community and stakeholder engagement contributed to the achievement of high VAS and SMC coverage. When planning an integrated campaign, stakeholders and representatives at all levels of the agency or agencies that plan the individual campaigns can ensure the priorities and approaches are in harmony in the integrated campaign.

- **Enabler:** Community and religious leaders are important stakeholders to engage in the planning phase as they bring knowledge of the community context and community engagement.

In Colombia, indigenous community leaders were engaged in microplanning and developing capacity-building materials for campaign implementers that were grounded in the sociocultural context.

- **Challenge:** Poor coordination and communication at various levels creates confusion that can impede successful collaboration.

In the multi-country survey of campaign managers, “poor communication or coordination between donors, governments, and other partners” was ranked as the top barrier to fully or partially integrated campaigns. One key informant noted: “It creates confusion…when donors and major actors say integration is a priority but coordinate and communicate poorly about integrated campaigns.”

Theme 2: Engaging Communities and Stakeholders During All Phases of the Integrated Campaign Contributes to the Acceptance of and Support for the Campaign

This theme was noted in projects in Nigeria, Ethiopia, Guinea, Colombia, and Bangladesh. Engaging communities and stakeholders in the planning phase (including microplanning, tool development, training, and mobilization), implementation phase (including data collection, monitoring, and field team
supervision), and analysis/dissemination phase (reviewing results and documenting and disseminating findings) is vital for success and longer-term sustainability. Assessing the readiness and strengthening the capacity of community members and stakeholders prior to campaign implementation are important to understanding current gaps and mapping out solutions to ensure the community and stakeholders are adequately prepared for the integrated campaign. The inclusion of stakeholders from all levels in each stage of the campaign process has consistently been noted as important in recent literature reviews [27,30,31]. Additionally, the benefits of SBCC activities for integrated activities are widely recognized, as exemplified by the Immunization Agenda 2030’s focus on a people-centered approach to stakeholder and community engagement [6].

- **Enabler:** Careful selection of the right cadre or level of community workers to implement integrated campaigns ensures the right skills mix for the delivery of more complex integrated interventions.

  Co-delivery of interventions (providing more than one drug/vaccine/intervention at a time, along with monitoring side effects and adverse events) is more complex than a single-intervention campaign. Therefore, integrated campaigns require the appropriate skills to successfully deliver the interventions. In Ethiopia, HEWs (salaried community workers in the health system) were engaged to deliver the two MDA campaigns and volunteer community drug distributors mobilized the community. Qualitative data confirmed that beneficiaries and stakeholders perceived the co-delivery strategy to be effective, acceptable, and feasible; this was attributed to the direct engagement of HEWs for the campaign. A focus group discussion participant added: “HEWs have a good understanding of the drugs…and advise the community very well. They also have a very good relationship with the community.”

- **Enabler:** Engaging key community members strengthens efforts in sensitizing, engaging, and mobilizing communities when planning and implementing an integrated campaign.

  In Guinea, the involvement of local officials and community leaders was crucial for the multi-antigen campaign, especially in locating women and their families who were not present because they were engaged in informal mining activities. The study team engaged local authorities/leaders, social mobilizers, community outreach workers, the media, religious leaders, and town criers to support mobilization and communication about the integrated campaign. In Bangladesh, the project team described community engagement as a key enabler of past integrated vaccination campaigns and highlighted the involvement of religious leaders who served as models or examples to raise community awareness and participation in the campaign.

- **Challenge:** Conflicting priorities or interests of different stakeholders need to be addressed from the planning phase.
In Ethiopia, frontline workers wanted to assume more power over the onchocerciasis MDA that integrated screening for unvaccinated children and education in water, sanitation, and hygiene and COVID-19, but some community volunteers wanted to keep their previously held role as drug distributors. The study team took steps to discuss and clarify roles with both the HEWs and community volunteers, using a participatory process to foster understanding of the integration approach and improve collaboration.

- **Challenge:** Volunteer compensation or incentives (sometimes called motivation) are not well defined or well understood in the context of integrated campaigns.

Community worker compensation emerged as an issue in the Emory University scoping literature review. In five studies of integrated NTD campaigns, evidence was inconsistent on whether campaign volunteers or workers’ compensation (or per diem or reimbursement) was associated with performance or subsequent retention. There was no standardized compensation approach across contexts and little understanding of the effects of the variation on campaigns.

**Theme 3: Government Leadership and Coordination During All Phases of Integration Ensure a Well-Planned, Coordinated, and Executed Integrated Health Campaign**

Government-led coordination of integrated campaigns allowed stakeholders to apply a unified approach among partners at the national, subnational, and community levels. Government leadership also ensured alignment with national health priorities or strategies and fostered an enabling environment by leveraging existing structures and systems. In Colombia and Rwanda, the project teams worked closely with the government at national or subnational levels on the planning of integrated campaigns, while in Ethiopia, Guinea, and Nigeria, the project teams worked at subnational level on the implementation and evaluation of integrated campaigns. Working closely with national and subnational governments is integral to effective health campaigns, according to a recent literature review [27]. This is further recognized and emphasized in key WHO strategies and frameworks for polio, vaccine-preventable diseases, NTDs, and malaria [6,7,28,29].

- **Enabler:** Collaboration among the programs in the integrated health campaign, including sharing and use of data, may lead to efficiencies and improved outcomes.

In Rwanda, the study team tested the use of a predictive analytical tool to support the government in the planning of the maternal and child health-focused integrated health campaign. This involved programs covering VAS and nutrition, NTDs, family planning, vaccines, and water, sanitation, and hygiene. The predictive analytics tool could be used for forecasting and calculating the necessary quantities of medical supplies. The tool’s dashboards visualized the districts’ operational readiness and budget allocations, drawing upon data from various health programs represented in the campaign. The tool allowed multiple health campaign staff to use it at the same time. The tool improved efficiency by allowing senior staff to monitor online
dashboards during the planning process without needing to be present in all meetings. Using the predictive tool saved an estimated 10 days of senior staff planning time.

- **Enabler:** Supporting governments to convene and coordinate partners and stakeholders leads to better outcomes of campaign integration.

The Ethiopia study team highlighted: “Strong district leadership, follow-up and timely feedback, and supportive supervision by the health staff contributed to achieving greater treatment coverage and effective fidelity of the co-delivery.”

**Theme 4: Use of Digital Tools or Applications May Facilitate Campaign Integration and Create Efficiencies in Different Phases of the Campaign**

In the multi-country survey, 70% of survey participants (27 campaign managers) reported that elements of integrated campaigns were digitized. Digital tool use was also reported in the IR studies in Colombia, Ethiopia, Guinea, Nigeria, and Rwanda. Prior to implementation, selecting digital health tools or systems that specifically address campaign planners’ needs and potential challenges is vital. Incorporating digital tools to better manage the data demands of monitoring and evaluation and to facilitate data-based decision-making aligns with current recommendations for health campaigns—for example, in WHO’s *Global Technical Strategy for Malaria 2016–2030 and Ending the Neglect to Attain the Sustainable Development Goals: A Road Map for Neglected Tropical Diseases 2021–2030* [7,28]. Additionally, as integrated health campaigns continue to work closely with existing government programs, digitization is necessary because primary health care systems increasingly incorporate new technologies to manage information and supply systems [32].

- **Enabler:** Applying digital approaches or tools to planning an integrated campaign reduces complexity and enhances collaboration.

In preparation for an integrated NTD campaign in Colombia, Universidad de los Andes co-developed digital training/capacity-building tools with government partners. The three-part training course, Neglected Infectious Diseases: Training for Health Agents, was designed for virtual use and covered the conceptualization, capacity-building, and socialization phases of preparing for the integrated NTD campaign. The team conducted a literature review to inform content development and then created and digitized the content. The digital modules covered One Health, STH, ectoparasitosis, and information and registration systems. The project also created an electronic medical record tool called SENIDE to collect NTD data from households.⁵

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⁵ The integrated NTD campaign in Vaupes, Colombia, occurred after this project ended.
- **Challenge:** In the multi-country survey, respondents indicated that challenges to digitization were a lack of infrastructure, a scarcity of supportive policies related to digitization, and inadequate resources.

The study team in Rwanda highlighted that some challenges in digital tool use during integrated campaigns were similar to challenges in single-intervention campaigns. There was limited in-country capacity to use the tools, reluctance among government managers to use a new digital tool after poor experiences in the past, discomfort with having campaign data stored in the cloud, and a need for continuous capacity building to ensure sustainable use.

**Promising Practices**

Thirteen promising practices emerged within the four themes, as described below.

**Table 3. Promising Practices from Synthesis of Implementation Research on Campaign Integration**

<table>
<thead>
<tr>
<th>Theme</th>
<th>Promising Practices</th>
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</table>
| Collaborative approach to planning | 1. Employ a co-design approach to allow campaign teams to apply adaptive management\(^6\) [33] to pinpoint and address potential bottlenecks for integrated health campaigns.  
2. Align components of integrated campaigns with established components in the health system.  
3. Leverage the resources and experience of a well-known national health program to allow for greater acceptability of the intervention being integrated. |
| Community and stakeholder engagement | 4. Ensure that the experiences and priorities of a wide range of stakeholders are incorporated in the planning and implementation of an integrated campaign.  
5. Leverage existing coordination mechanisms and systems when planning and implementing integrated campaigns, allowing stakeholders to capitalize on existing human resources, capacity/skills, and institutional knowledge.  
6. Select the appropriate health worker and community health worker cadres within the health system to ensure delivery of more complex integrated interventions.  
7. Ensure integrated campaign planning addresses the workload of health workers and community health workers.  
8. Develop and deliver tailored social and behavioral change communication, placing emphasis on the integrated interventions. |
| Government leadership and coordination | 9. Work through a coordinating body that ensures transparency and facilitates advocacy and support for the integrated campaign.  
10. Convene all stakeholders after the integrated campaign to review performance and reflect on challenges and solutions for future campaigns. |

\(^6\) Adaptive management involves adaptations to implementation based on key observations and/or emerging information.
### Theme 1: Collaborative Approach to Planning

> 1. Employ a co-design approach to allow campaign teams to apply adaptive management to implementation based on key observations and/or emerging information to pinpoint and address potential bottlenecks for integrated health campaigns. Adaptive management is being “able to adapt in response to changes and new information…[It] requires an environment that promotes intentional learning and flexible project and activity design and minimizes the obstacles to modifying programming” [33]. In the context of integrated health campaigns, this includes being able to respond to issues that may arise. In Guinea, a promising practice was the “the adaptation to women’s schedules in specific areas for evening vaccinations (due to informal mining and agro-pastoral activities) [which] allowed for better social mobilization since the women and children [moved] from place to place.” The vaccinator teams also adjusted their working hours to accommodate the increase in workload due to co-delivery.

> 2. Align components of integrated campaigns with established components in the health system. In the project in Nigeria, VAS and SMC data reporting tools were harmonized, including tally sheets, referral forms, and summary sheets. These tools were aligned with the country’s district health information system and Growth Monitoring Register (the reporting system for VAS). The number of children in the district health information system reported to have received VAS during campaign implementation increased from less than 2,000 to over 50,000 each in Giade District and Katagum District. 

> 3. Leverage the resources and experience of a well-known national health program to allow for greater acceptability of the intervention being integrated. In Bangladesh, the Expanded Programme on Immunization was recognized by the community and had experienced staff and existing operational infrastructure and processes. Campaign implementers mentioned successfully integrating VAS and anthelmintic tablets with well-established vaccination programs (EPI) against polio, measles, and rubella.

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7 Previously, children in these districts had not received VAS.
Operationalizing promising practices for program managers (Theme 1)

- Ensure various stakeholders (government, implementing partners, community leaders and members, frontline workers) are actively engaged in and co-design the integrated campaign.

- Identify potential bottlenecks in each phase of the integrated campaign, develop plans and scenarios that allow for flexibility and adaptive management, and plan to review activities for improvement.

- Add opportunities to planning/microplanning meeting agendas to discuss alignment during all phases of the campaign, including areas for potential alignment with national health information system indicators and tools.

**Theme 2: Community and Stakeholder Engagement**

- **4. Ensure the experiences and priorities of a wide range of stakeholders are incorporated in planning and implementing an integrated campaign.** In the multi-country survey, campaign managers confirmed that campaign coordinating bodies should include a wide range of stakeholders, including government agencies, development partners, community leaders, religious leaders, and technical working groups. A key informant shared:

  “There is diversity in campaign stakeholders who all show up and actively participate in planning.”

- **5. Leverage existing coordination mechanisms and systems when planning and implementing integrated campaigns,** allowing stakeholders to capitalize on existing human resources, capacity/skills, and institutional knowledge. Staff with previous experience in planning and implementing campaigns provide expertise and can incorporate lessons learned into future integrated campaigns. Community representatives will provide the community perspective throughout planning.

- **6. Select the appropriate health worker and community health worker cadres within the health system** to ensure the right skills mix for the delivery of more complex integrated interventions. In Ethiopia, HEWs were engaged to deliver the integrated campaigns and community drug distributors were engaged to mobilize the community; these were complementary roles that needed to be negotiated. Co-delivery of interventions is more complex than a single-intervention campaign; thus, it requires the appropriate level of experience, capacity, and capacity building.

- **7. Ensure planning and remuneration addresses the workload of health workers and community health workers.** In Guinea, the project team reported that some vaccinators believed their workload increased with the integration (“the work of the vaccinators is doubled”). They also believed that the remuneration was not proportional to the work done in the field.

- **8. Develop and deliver tailored SBCC.** During an integrated campaign, it is important to create harmonized health education messages that are guided by formative research to support the co-administration of medicines and/or vaccines, to reduce misinformation, and to address concerns or hesitancy. In Ethiopia, “health education was aided by locally appropriate SBCC materials (e.g., posters,

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8 In immunization, SBCC is also called behavior and social drivers.
brochures, information card, and flipchart) and a harmonized training manual that [were] co-developed through a participatory and collaborative process informed by the formative assessment and existing resources.” As a result, there were positive changes in community awareness and perceptions toward onchocerciasis, STH, COVID-19, and the COVID-19 vaccine [15]. In the Emory University scoping literature review, moderate and consistent evidence from five published studies indicated that health education of participants increased integrated MDA uptake and improved perceptions of adverse events.

**Operationalizing promising practices for program managers (Theme 2)**

- Identify representatives from national health programs, donor representatives, implementing partners, community and religious leaders (from national to community levels); use existing planning committees and working groups (with clearly defined roles for the integrated campaign) to convene, coordinate, plan, and implement.

- Map out the skills needed to deliver each intervention and identify existing cadres of facility- and community-based health workers to support campaign activities; ensure workload of co-delivery is well understood and related issues are addressed; ensure appropriate trainings are created and delivered with an emphasis on co-delivery, safety of beneficiaries, and workload management.

- Use and adapt SBCC materials from each health program for the integrated campaign and identify key messaging for stakeholders at all levels.

**Theme 3: Government Leadership and Coordination**

- **9. Work through a coordinating body that ensures transparency and facilitates advocacy.** In Bangladesh, interviews revealed that:

  “committees at the central and field levels were formed to coordinate the policy-level stakeholders with the mid-level and field-level stakeholders. The central-level committee worked at the management levels, whereas the policy-level stakeholders (at the highest level) set the target population and other plans of the campaign implementation through meetings, and the field level worked at the logistics level.”

- **10. Convene all stakeholders after the integrated campaign to review performance** on delivery and uptake of the integrated interventions and reflect on challenges and solutions. In Ethiopia, following the MDA, a one-day review meeting was conducted with implementers and stakeholders in which the co-delivery team presented the performance in both interventions, challenges, and solutions. In Guinea, after the evaluation of the campaign, WHO independent monitoring teams and health facility and district-level stakeholders convened and reviewed results and devised points for improvement.
Operationalizing promising practices for program managers (Theme 3)

- Utilize meeting agendas of coordinating teams to present key aspects of the integrated campaign for consideration; ensure committees or technical working groups for each health program have clearly defined roles for all phases of the integrated campaign.

- In the campaign planning timeline, embed government-led meetings to review actions taken; convene stakeholders to review and document outcomes of the integrated campaign, identifying operational successes and challenges to consider in the future.

**Theme 4: Use of Digital Tools**

> 11. Identify opportunities in which digital tools may be used during all phases of the campaign and plan for their use. As the Rwanda study found, efficiencies may emerge while facilitating collaboration across health programs. Tools can be used across all phases of campaigns. The purpose for use, timing, and resource allocation of the tools must be clear.

> 12. Strengthen the capacity of staff to use and manage digital tools, reducing capacity gaps among governments and implementers of integrated campaigns. Capacity building and strengthening is aided by the development of clear, comprehensive standard operating procedures for current and future users.

> 13. Document challenges in the use of digital tools and dashboards to understand how tools and processes can be improved for future integrated health campaigns. These learnings support the practice of evidence generation to inform the digitization of future integrated health campaigns.

Operationalizing promising practices for program managers (Theme 4)

- Map out the phases of an integrated campaign and determine in which activities the digital tools and approaches can be used to optimize the integrated campaign.

- Develop a training plan that suits the capacity and context of the implementation teams.

- Identify champions in governments or implementing partners who can serve as resources in guiding those who are working to strengthen their capacity in digital tools.

**Discussion**

The synthesis of findings from IR on campaign integration identified 13 promising practices spanning four themes related to collaborative planning, community and stakeholder engagement, government leadership and coordination, and digital tool use. The synthesis builds on previous research supported by HCE, including a series of case studies focused on NTDs, malaria, VAS, and immunizations, which resulted in a set of 10 promising practices for integrated campaign planning [34]. The promising practices from the IR synthesis complement those identified earlier; together, they allow for more informed planning, implementation, and evaluation of integrated campaigns.

**Knowledge Gaps**
Five knowledge gaps on integrated campaigns remain to be filled following the synthesis. The gaps relate to community worker incentives, cost-effectiveness, evaluation of expanded integrated campaigns, continuous input from the community, and digitization of integrated campaigns, as described below.

Community Worker Compensation/Incentives

The IR studies highlighted how community volunteers and other campaign workers’ workload during co-delivery of interventions compared with that during a single intervention. The Emory University scoping literature review noted that community workers and volunteers’ compensation/incentives varied across health programs. This was also found in a recent campaign financing landscape analysis [35]. In many countries, a standardized approach to compensation/incentives has yet to be developed. Colvin et al. explored community health worker motivation and compensation across 29 national health programs. The researchers found that community health workers’ motivation was maintained with appropriate incentives (direct, indirect, financial, non-financial), in addition to being valued members of the health system with clear roles and responsibilities [36]. Differences in compensation between campaigns could contribute to a loss of morale among volunteers or challenges in staffing integrated campaigns, thus affecting campaign coverage. More research is needed to understand how these variations may impact morale, motivation and performance. Evidence could inform the streamlining or harmonization of compensation during co-delivery of interventions.

Cost-Effectiveness

The study teams in Guinea, Ethiopia, and Rwanda called for evidence on the average operational cost per person reached through the co-delivery approach versus a single intervention, a cost-effectiveness analysis, and a cost-benefit study of maintaining the predictive analytic tool for planning campaign integration, respectively. Additionally, the Emory University scoping literature review identified gaps related to economic benefits at the community level. WHO and the Pan American Health Organization (PAHO) noted in a microplanning guide for NTD chemoprevention campaigns that addressing costs early and at every stage of the campaign is a vital step, and it is necessary with the increasing complexity of integrated campaigns [37]. A recent review of health campaign integration literature identified perceived cost-effectiveness, or a lack thereof for vertical campaigns, to be a motivating factor for campaign integration. This study also noted that quantifying cost-effectiveness is challenging due to limited costing and coverage data [27]. In another study, Morice et al. found that although some NTD integration activities maintained high coverage while reducing costs, unexpected additional expenditures, such as screenings for skin NTDs introducing a wide variety of unintended skin diseases into the program, increased and reduced efficiency in unforeseen ways [38]. Understanding costs related to all facets will help country programs plan for future integrated campaigns.

Expansion and Evaluation of Integrated Health Campaigns

Three studies proposed the evaluation of integrated campaigns either expanded geographically or through co-delivery of additional interventions. The study in Guinea indicated an interest in exploring the integration of immunization campaigns with other interventions (insecticide-treated bed nets, seasonal malaria chemoprophylaxis, etc.) in the same geographic area. The study in Bangladesh proposed
evaluating integrated campaigns conducted in hard-to-reach areas. In Ethiopia, the study recommended that regional and national NTD programs adopt and sustain the co-delivery approach and expand the approach to new districts through a phased process, with testing in rural and urban areas. Exploring opportunities and strategies to expand integration will help programs to identify the optimal pairing or bundling of campaign interventions to maximize coverage among populations of interest and increase coverage of geographic areas.

Standardized guidelines are needed on how to evaluate the effectiveness of integrated campaigns. Measurement of campaign coverage for an integrated campaign is more complicated than for a single campaign. There is a need to consider the outcomes of safety, equity, reduction of zero-dose populations, and community and health worker acceptability, among others. In fact, a review of integration efforts during Vaccination Week in the Americas noted the difficulty in quantifying the effectiveness of the integrated campaigns due to the uneven nature of the reported outcomes [39]. Additionally, 11 parameters of delivery effectiveness emerged from a UNICEF literature review and stakeholder consultations at global and national levels, with a focus on nutrition [40,41]. There is a need to standardize key performance measures of effectiveness across health programs, with a focus on integrated campaigns. Certain perspectives and experiences need to be documented and appreciated, specifically those of frontline workers and community-level stakeholders. The incremental cost of adding interventions to a campaign should be assessed to inform budget holders and financing mechanisms.

**Continuous Input from the Community**

Soliciting continuous feedback from the community or stakeholders in a routine process would ensure the community’s voice is heard and incorporated into the integrated campaign. The Guinea study team called for identifying and incorporating a mechanism for obtaining community input routinely. Similarly, UNICEF’s study of delivery effectiveness in nutrition programs also called for a review of methods for stakeholder engagement and real-time consensus building, stating, “purposefully selecting participants to reflect stakeholder diversity across ministries of health, program leadership and non-governmental organizations should be widened to include community representatives” [40]. WHO and PAHO’s microplanning guide for NTD campaigns named SBCC and community engagement as key components to be considered from the beginning of any campaign [37]. A review of the most effective methods for combating and eliminating NTDs called for robust community and community health worker engagement and a robust continuous monitoring and evaluation system to ensure that goals and needs are met [42]. These inputs will also help guide planners for future integrated campaigns, informing considerations for planning, engaging, sensitizing, and partnering with communities.

**Digitization of Integrated Health Campaigns**

The Rwanda study team and the multi-country survey highlighted the need for more evidence on the role and effects of digital tools and platforms in all phases of integrated campaigns, particularly the planning and implementation phases. Digitization of integrated campaigns requires resources beyond tools for data collection and data review dashboards—it also requires the capacity to use the tools and manage and analyze data for the integrated campaign. Another layer of complexity is that integrated campaigns often rely on resources that are assumed to exist or function, including health information.
systems, a culture of data consumption and use, reliable internet connectivity, strong capacity for digital tools, management and application of digital tools, and available funding for the development and maintenance of digital tools and applications. A systematic literature review of integration involving NTD campaigns found that the integration of data collection and NTD indicators into the national health information system is a vital step in monitoring, evaluating, and measuring the effectiveness of the intervention [27]. Therefore, the larger digital ecosystem and health system must be examined prior to campaign integration.

It is important to determine whether digital tools and applications contribute to integrated campaigns being more efficient (in terms of logistical costs, human resources, planning time, implementation time, and quality) and whether supervision of integrated campaigns can be improved with digital tools. Monitoring and evaluation tools may be effectively adapted from existing systems, as PAHO’s Institutional Repository for Information Sharing (IRIS) demonstrated when developing new tools for other health programs from effective monitoring tools already in place for immunization programs [43,44].

**Way Forward to Address Knowledge Gaps**

**Program Managers and Policy Makers**

To address the knowledge gaps, policy makers must examine opportunities to include the costs of integrated campaigns in annual health program budgets and explore domestic funding streams for integrated health campaigns to ensure sustainability. To ensure appropriate incentives/compensation for an integrated campaign, program managers must include them in the campaign budget from the start and ensure they are provided to community workers. Compensation should consider the incentive of each stand-alone intervention campaign and should be commensurate with the level of effort and complexity of co-delivery, emphasizing fairness. Standardized compensation/incentives across all health campaigns should be considered. Program managers should also draw lessons from other integrated campaigns, considering evidence on the feasibility and safety of administration of biomedical interventions. Additionally, program managers should ensure that SBCC addresses all interventions that are delivered during the campaign and sensitizes key stakeholders.

Policy makers should consider promoting the integration of health campaigns in national health strategic plans and policies to stimulate resource allocation and help secure additional donor funding. To ensure continuous community engagement, program managers must build in mechanisms for gathering data from the community during all phases of the campaign. These may be informal or formal, through brief discussions or qualitative data collection. Feedback loops are very important to ensure the community’s needs and emerging concerns are addressed. Program managers should take a lead in determining evaluation questions and collaborate with evaluators or researchers on assessments to determine the effects of integrated campaigns. Finally, to facilitate digitization of integrated campaigns, policy makers should review related policy frameworks, identify areas that could be strengthened, and consider updating policies that would benefit integrated campaign activities and the larger digital ecosystem in the country. Program managers should identify opportunities during each phase of the integrated
campaign where use of digital tools could create efficiencies and facilitate this by strengthening related capacity and identifying champions to build capacity.

Researchers and Evaluators

There are opportunities to collaborate with governments to formulate and answer objectives/research questions, develop methods to collect data during specific points of the campaign, and research activities in budgets. Researchers and evaluators are well placed to explore best practices and outcomes to ensure health worker and community health worker incentives/motivation and perspectives on fairness.

Cost-effectiveness and efficiency are important parameters requested by stakeholders who examine integrated campaigns, yet a comprehensive and standard measure of these is needed. To assess the cost-effectiveness of a campaign, it is integral to ensure that evaluators or researchers document the effects and costs of integrated programs (e.g., costs of operations, training, commodities and supplies, convening meetings, tools used for the campaign, staff time) and review costs (at national and subnational levels) at the end of the campaign, documenting findings and lessons learned.

There is a desire to expand the scope and reach of integrated campaigns, but few integrated campaigns have been rigorously investigated to provide definite guidelines and recommendations for how to proceed. Further, continuous engagement and feedback from the community and at all levels should be assessed for their contribution to integrated campaigns and sustainability.

Digitization of information networks and tools is a complex innovation that has investment costs. Many campaigns and health programs are attempting digitization across a variety of platforms, providing the necessary environment for research into how to accomplish digitization when it is appropriate and what methods are most effective in a given situation. Researchers can present to stakeholders the value of IR and mixed-methods data (qualitative and quantitative) that capture a variety of perspectives and measure a variety of effects.

Strengths and Limitations

The synthesis summarized findings from eight IR studies across several health programs, which were conducted in different geographic regions based on different protocols and with different communities. The synthesis and the projects upon which it was based present the breadth of learning that arises from integrated campaigns. IR allowed for stakeholders’ views to be presented along with quantitatively measured outcomes. A variety of outcomes were reported across the eight studies, in addition to coverage, yet each project measured a unique set of parameters. All studies were initiated and completed during the COVID-19 pandemic, and they adhered to all COVID-19 protocols. The project teams are part of the HCE Coalition and therefore can continue sharing insights from the local setting after completing the projects.

Several limitations should be noted. The results of one integrated campaign cannot be directly compared with another and may not be generalizable to other settings. Within each health program, there were few IR studies on fully integrated campaigns and there were no examples of partially integrated
campaigns without co-delivery. The IR teams were highly motivated to try and evaluate integrated campaigns, having been selected after a rigorous review process in a competitive request for proposals. Therefore, they may not be representative of all country programs considering or conducting integrating campaigns. The projects were short in duration, so they may not have had enough time to assess longer-term outcomes. Generating evidence on the complexity of government collaboration during an integrated campaign would better guide work with governments for future campaigns. Research suggests that there may be challenges related to working with government partners [31], which the IR studies profiled in this synthesis did not surface.

**Conclusion**

The synthesis surfaced evidence on the outcomes and themes emerging from eight IR projects related to campaign integration. The findings contribute to answering the HCE Coalition’s research and learning questions and offer campaign managers and researchers considerations for planning, implementing, and evaluating integrated campaigns. The promising practices can be taken up and further tested by planners and implementers of integrated campaigns.
References


# Annex

## Annex Table 1: Implementation Research Studies on Campaign Integration Sponsored by the Health Campaign Effectiveness Coalition

<table>
<thead>
<tr>
<th>Project Title, Project Lead, Gov. Agencies Involved, Health Program</th>
<th>Study Objectives and Methods</th>
<th>Study Results</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Projects related to planning and preparation of integrated campaigns</strong></td>
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<tr>
<td>Strategies for strengthening technical capacities in the implementation of the integrated campaign of co-administration of azithromycin-albendazole for the control of trachoma and soil-transmitted helminthiasis among the Indigenous populations of Medio Vaupés, <strong>Colombia</strong></td>
<td><strong>Objectives</strong>&lt;br&gt;- Implement technical and pedagogical strategies to strengthen capacities in the implementation of the integrated mass drug administration (MDA) campaign of azithromycin and albendazole for the control of trachoma, soil-transmitted helminths (STH) and ectoparasites in the vulnerable indigenous population of Vaupés, Colombia</td>
<td>- Literature review highlighted use of (dialectical and non-dialectical) tools, participatory mapping, cultural competence model, and use of school settings for trachoma education to support trachoma elimination&lt;br&gt;- Designed and developed a virtual course focused on training health agents on Neglected Infectious Disease (NID) using phased approach (analysis, content creation and development of digital product).&lt;br&gt;- Routine NID data tool was developed and digitized as part of development of NID Information and Registration System&lt;br&gt;- Trained 37 participants on NID. Evaluation results show the training increased knowledge and competencies: the average pre-training result was 9.8/20 (49%) versus average post-training 15.01/20 (75.1%)</td>
</tr>
<tr>
<td><strong>Universidad de los Andes</strong> (lead), Vaupés Municipal and Departmental Health Secretariat, The Association of Traditional Indigenous Authorities of Medio Vaupés (ATIVAM) [13]</td>
<td><strong>Methods</strong>&lt;br&gt;- Scoping Literature Review of existing knowledge of the WASH strategy, BEST framework, and adequate diagnosis and treatment for trachoma, STH, and ectoparasites.&lt;br&gt;- 33 stakeholder delegates, with particular input from those with an Indigenous background, utilized pedagogical methodologies to design a training regime tailored to indigenous communities&lt;br&gt;- Evaluated sites for technological efficacy and trained 37 individuals&lt;br&gt;- Information collected in the SIBACOM and SENIDE systems from approximately 3,700 people and 750 families.&lt;br&gt;- Administered pre-post questionnaires 40 delegates involved in the development to evaluate effectiveness of training</td>
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<tr>
<td><strong>Primary Health Program: Neglected Tropical Diseases</strong></td>
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<tr>
<td>Improving health campaign microplanning efficiency and effectiveness with the use of</td>
<td><strong>Objectives</strong>&lt;br&gt;- Evaluate whether the use of artificial intelligence (AI)/predictive analytics increases efficiency in the planning</td>
<td>- Reduced number of meetings, total meeting time and reduced number of in-person hours using predictive analytics tool compared to manual planning approach</td>
</tr>
</tbody>
</table>
### Study Objectives and Methods

**Process (by reducing staff workload) and improves effectiveness (by better identifying target groups).**
- Assess the acceptability, usability, and functionality of using predictive analytics for health campaign micro planning among those responsible for the day-to-day management.

**Methods**
- Concurrent comparative evaluation of microplanning procedures with the Ministry of Health workers and predictive analytic tools
- 3 sequential surveys with groups: a pretest survey to members of the international health care logistician association (IAPHL) community; a survey to 51 of 60 potential campaign planners; and a user feedback survey sent to 13 participants
- Direct observation workshops with 13 health campaign planners
- 10 KIs among experts with an average of 9 years of health campaign planning experience

### Study Results
- Enabled planning teams to analyze the relationship between coverage and poverty rates (a limitation of the manual planning process)
- The tool produces a series of key performance indicators providing data that are useful in planning integrated campaigns
- Planning staff were observed navigating the tool easily and found it intuitive.
- Tool was perceived to be valuable; 60% of respondents said the tool included all necessary components; allowed for multiple people to work on the tool concurrently, provided dashboards for decision makers and supported automation of forecasts and generated reports.
- MOH Rwanda planned to use the tool in planning for future integrated campaigns

### Projects evaluating co-delivery of campaigns

**Co-delivery of preventive chemotherapies against onchocerciasis and soil-transmitted helminths along with complementary social and behavioral change communication interventions in Ethiopia**

Jimma University (lead)
Jimma Zone Health Office, Oromia Regional Health Bureau [15]

**Objectives**
- Evaluate the effectiveness of the co-administration of onchocerciasis chemotherapy and deworming of STH along with complementary health interventions (e.g. education on WASH and COVID-19; and identification and linkage of unvaccinated children less than 1 year of age)
- Assess the acceptability and feasibility of the co-delivery strategy from the perspectives of beneficiaries and stakeholders

**Study Results**
- Treatment coverage for onchocerciasis chemotherapy (IVM) was 89.5%; for STH deworming by ALB/MEB, was 84.1%; overall treatment coverage of 83.2% (n=2610 eligible) for combination therapy (ALB/MEB+IVM),
- No reported adverse drug events during the co-administration. Validation survey identified three cases of adverse drug events (nausea, vomiting, and abdominal pain). Beneficiaries and health workers also reported that the co-administration was safe.
- Most survey respondents (88.5%) received SBCC information during the co-delivery campaign. Most respondents identified HEWs (66.7%) and volunteer
<table>
<thead>
<tr>
<th>Project Title, Project Lead, Gov. Agencies Involved, Health Program</th>
<th>Study Objectives and Methods</th>
<th>Study Results</th>
</tr>
</thead>
</table>
| **Primary Health Programs: Neglected Tropical Diseases, Immunization, Water, Sanitation, and Hygiene (WASH)** | *Methods*  
- Exploratory assessment with six FGDs, 11 KIs, and 11 EGDs, involving diverse groups of communities and stakeholders.  
- Household knowledge, attitudes, and practices (KAP) survey of 732 households in 10 target villages in Jimma zone (5 of 23 districts)  
- Co-designed co-delivery strategy in training workshop with regional and zonal NTD experts  
- Co-administration of MDA (ivermectin and albendazole/mebendazole) by HEWs with support from community volunteers, education, and health workers  
- Evaluated effectiveness and acceptability of intervention via a mixed-method KAP-integrated coverage survey of 776 households and 6 FGDs, 5 EGDs, and 10 KIs of stakeholders and beneficiaries.  
- Registration, education, and referral of under- and unvaccinated children of households from 10 *gandas* from 5 districts to HEWs | Youths (64.7%) as source of information. SBCC activities were identified among the challenging components of co-delivery due to inadequate time for health education during drug administration and crowding of people waiting.  
- Community awareness of onchocerciasis and STH increased to endline and there was reported improvement in sanitation practices.  
- Among registered children, 12.7% (n=2617) were identified as unvaccinated and referred; 77.1% referred confirmed being vaccinated.  
- Findings highlighted that the co-delivery strategy was perceived to be effective, acceptable, and feasible to the beneficiaries and stakeholders.  
- Overall satisfaction with the co-administration was 91.4%, and 96.3% of the respondents would like to get the drugs similarly in the future. |
| **Evaluation of the Integrated Measles and Meningitis A Vaccination Campaign in the Meningitis Belt of Guinea in 2022**  
*FOSAD* (lead): Ministry of Health and Sanitation, National Directorate for Epidemiology and Disease Control; Expanded Programme on Immunization (and partners), National Institute of Statistics, Regional Health Inspector and Prefectural Directors of | *Objectives*  
- Effectiveness and main challenges, obstacles, as well as lessons learned and promising practices related to the integration of the MEAS-MenA campaign.  
- Assess the perception of the community, health workers/vaccinators and managers on the integration of the MEAS-MenA campaign.  
- Estimate vaccination coverage as well as indications of effectiveness of the integrated MEAS-MenA campaign.  
- Identify promising practices and make recommendations to the various stakeholders for the effectiveness of forthcoming campaigns and identification of research gaps. | Vaccination coverage was 82.4% (95% CI, 79.8-84.8) in Kankan and 54.9% (95% CI, 44.6-64.7) in Siguiri.  
- A total of 138 zero-dose children (8.1%) who had not received any Expanded Programme on Immunization (EPI) vaccines after birth were identified; 79 (8.3%) were from Kankan District and 59 (7.9%) were from Siguiri District.  
- Various channels were used to disseminate information to the parents of the children during the campaign- local authorities, radio and town criers were most frequently identified channels.  
- Qualitative study revealed concerns among respondents about the increase in workload and remuneration not being proportional due to integration of campaigns.  
- Community stakeholders felt excluded from the validation process of microplans as there was belief. |
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<td>Districts of Kankan and Siguiri, Sociology Department of General Lansana Conté Sonfonia University, Conakry [16]</td>
<td><strong>Methods</strong>  - Post-Campaign survey of 542 households from 2 districts, representing 1700 children, on the results of the integrated vaccination campaign  - Interviews of the actors in charge of planning the campaign at the regional health inspectorate, 2 prefectural health departments, and a 20% sample of the actors involved in the campaign from 5 districts (the head of the health center, the EPI manager at the level of the health centers, two (2) local elected officials, and two immunization agents)</td>
<td>that the validation was done either at the regional level or at the national level (central EPI), without factoring local needs (human, material, and financial).  - Field staff expressed gaps in logistical planning (inadequate cold chain storage) particularly for hard-to-reach areas  - Concern about limited availability of the population due to their livelihoods (mining or agriculture) and timing of visits.</td>
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<td><strong>Primary Health Programs: Immunization</strong></td>
<td><strong>Objectives</strong>  - Design and implement, in collaboration with key stakeholders, an integrated seasonal malaria chemoprevention (SMC) plus vitamin A supplementation (VAS) campaign at scale and in diverse settings in Bauchi State.  - Evaluate vitamin A coverage, SMC coverage, safety, equity, efficiency and cost and acceptability of integration among caregivers, field implementers, and policy makers.  - Develop and implement a research uptake plan.  - Provide policy makers with evidence to inform decision-making about integrating SMC and VAS in Nigeria.</td>
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<td>Malaria Consortium (lead); National Malaria Elimination Programme (SMC), Primary Health Care Development Agency (Nutrition), Bauchi State Government [17]</td>
<td><strong>Primary Health Programs: Malaria, Vitamin A Supplementation</strong></td>
<td>- Overall, 170,681 children received both SMC and VAS during the integrated campaign, whereas 157,876 received VAS only. VAS coverage increased from 1.1% at baseline (without SMC integration) to 82.3% at endline (with SMC integration), in the study areas.  - Adverse drug events were reported in only 4.1% of children who received SMC and 1.6% of children who received VAS.  - No difference in demographic characteristics among children that received SMC at endline and those who did not receive it. Similar results among children who received VAS.  - Total cost per child receiving only SMC at baseline was $0.94. Total cost per child receiving both VAS and SMC at endline was $1.18.  - Caregivers were happy with the intervention because of the perceived benefits to children.  - Community distributors, caregivers and some stakeholders believe the integration is feasible and likely to continue. Some community distributors expressed concerns about the 30-minute wait time between SMC administration and VAS.</td>
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- Explore motivating, enabling, and hindering factors of integrating vaccine-preventable disease vaccination campaigns with other health campaigns  
- Determine the negative and positive effects of integrated health campaigns on service delivery outcomes  
- Identify components of integrated health campaigns that can be applied to strengthen future health programs in Bangladesh | Literature review findings revealed there is an initial cost to integrating two or more services, which may not be feasible for some low- and middle-income countries in the short term.  
- Integration increases staff workload and this is not always reflected in training and logistical support when planning for the integrated health campaign  
- Survey findings: Most respondents (n= 269, 98.9%) agreed that the target population could be reached by providing OPV, vitamin A, and deworming tablets.  
- Interviews respondents indicated there was high coverage of OPV, vitamin A and deworming through NIDs (95% coverage)  
- Special strategies were applied to address initial hesitancy and misconceptions about the vaccine and lack of access in hard-to-reach areas  
- Most (n=249, 91.5%) survey respondents were satisfied with the integration of health campaigns and said NID campaigns were designed such that there is minimal disruption to routine EPI  
- Most policy-level survey respondents (n=48, 87.3%) mentioned the government drove implementation of the integrated health campaign at all levels.  
- Government of Bangladesh and development partners made significant gains in capacity building and training of staff and volunteers from national to field levels.  
- To monitor the implementation activities, the implementers used mainly checklists (n=232, 85.3%), reported to the higher authorities directly (n=107, 39.3%), and did campaign-based monitoring (n=83, 30.5%). The government of Bangladesh assigned independent observers to monitor the NIDs. The |
| Methods  
- Scoping and gray literature reviews of existing evidence on ‘Integrated Health Campaigns’ of immunizations in low- and middle-income countries  
- Stakeholder Workshop with Government officials from EPI Headquarters, Communicable Disease Control, Institute of Public Health Nutrition [18]  
- Primary Health Programs: Immunization, Neglected Tropical Diseases | - Quantitative survey of 272 health staff involved in NID activities  
- 18 KIs with national and district officials and 32 IDIs of field-level staff | - |
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| Health Campaign Integration: A Scoping Review, Section 1 - Neglected Tropical Diseases (Scoping Literature Review) | **Objectives**  
- Increase understanding of the full/total value or social and economic benefit of integrated health campaigns.  
- The scoping review will aim to answer a discrete set of research questions on the full value (or benefits) and risks of campaign integration to a wide range of actors: individuals/families, communities (community leaders, community health workers), campaign managers, health workers, government Ministries at local, regional and national levels and in different divisions and other levels of the health system, partners, and other stakeholders involved in or affected by health campaigns.  

**Methods**  
- A scoping review of the literature (secondary data) and the available body of peer-reviewed evidence related to health campaign integration with a focus on the priority health domains from 2000-present; 139 relevant articles were identified.  
- Analyzed and compared a subset of 39 studies found that focused specifically on the integration of the detection and/or treatment of neglected tropical diseases (NTDs) into the primary health care system.  
- Analyzed comparable populations from similar geographic regions where appropriate and reported aggregated results in the following areas of interest: cost-effectiveness, participant perspectives on adverse events, health education, equity, program benefit themes, and personnel perspectives. | - NTD health campaigns, particularly mass drug administration campaigns, should be integrated with other campaigns, or into the health system. -- supported by strong evidence of both infection reduction in participant populations and cost-effectiveness for governments and programs with the integration of health campaigns. This is further supported by moderate and emerging yet consistent qualitative evidence of time and economic benefits for participants, relationship strengthening, and increases in equity.  
- Programs should incorporate health education in the development and delivery of these campaigns -- supported by moderate and emerging evidence on the importance of health education in the uptake of integrated NTD MDA programs and understanding of the adverse events and side effects that accompany the drugs. The importance of health education was supported by health campaign personnel and participants.  
- Programs should consider local context when selecting the delivery channel for PC NTD health Campaigns -- supported by strong cost-effectiveness data indicating MDA only campaigns were more cost-effective when delivered via community or combined community and school delivery channels compared to school alone. |
| Emory University (lead) [19]  
Primary Health Programs: Neglected Tropical Diseases, Malaria, Immunization, Vitamin A Supplementation |  
| A survey of country campaign manager perspectives on integration: a snapshot in 2022 (multi-country survey) | **Objectives**  
- Identify what types of campaigns are most commonly integrated and to what degree  
- Determine when and where campaigns are integrated | - Vitamin A and deworming are commonly included in fully/partially integrated campaigns.  
- Respondents reported that their countries or programs used partial integration most often, |
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<td><strong>Linksbridge</strong> (lead) [20]</td>
<td>- Determine what characteristics of campaigns are typical targets for integration&lt;br&gt;- Determine whether integration involves digitization&lt;br&gt;- Identify facilitating factors and barriers to integration.</td>
<td>followed by both full and partial integration, then full integration alone.&lt;br&gt;- Respondents said integrated campaigns were sometimes implemented in conjunction with immunization weeks, national and subnational immunization days, national CH weeks, or other.&lt;br&gt;- Integration facilitators: most frequently cited government buy-in; existing donor, partner, and government coordination mechanisms; and identical target populations.&lt;br&gt;- Barriers to integration: poor communication or coordination between donors, governments, and other partners; lack of government buy-in and different target populations&lt;br&gt;- Respondents confirmed that campaign coordinating bodies or an integration workgroup are in place when integrating activities.&lt;br&gt;- Most collaboration occurs during training; coordination and microplanning; and social mobilization and communication. Collaboration least occurs during the evaluation and surveillance processes.&lt;br&gt;- Over half of the respondents reported some elements of digitization. Digitization was most frequently used for data collection and reporting&lt;br&gt;- Barriers toward digitization include lack of supportive policy environment, lack of infrastructure and poor resourcing were identified as digitization barriers.</td>
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<td><strong>Primary Health Programs:</strong> Neglected Tropical Diseases, Malaria, Nutrition, Immunization</td>
<td><strong>Methods</strong>&lt;br&gt;- An online, 25-item survey of 49 individuals representing 26 countries, several health domains, and a wide range of roles, including country representative, desk officer, monitoring and evaluation officer, and program analyst.&lt;br&gt;- 7 KIIs of interviewees from 5 countries and 1 global-level partner work in many sectors (community-based health care, vaccine-preventable diseases, malaria, and NTDs) and represent a range of roles (control program lead, health promotion manager, immunization specialist, ministry of health official, program director, surveillance agent, and vaccine management officer).</td>
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